DOCUMENT RESUME

ED 402 721 EC 305 236

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TITLE Do the Planful Behaviors of Special Needs Preschoolers Affect Learning as Exhibited through Play?
PUB DATE Jul 96
NOTE 93p.; Master's Practicum, Malone College.
PUB TYPE Dissertations/Theses - Practicum Papers (043) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Cognitive Development; Developmental Stages; *Disabilities; Early Intervention; Individualized Education Programs; *Instructional Effectiveness; Interpersonal Competence; Intervention; Learning Processes; Metacognition; *Planning; *Play; Preschool Children; Preschool Education; *Rural Education; Skill Development; Social Development; Special Education; Student Educational Objectives; Teaching Methods; Thinking Skills

ABSTRACT

This qualitative and quantitative study focused on two groups of preschoolers (ages 4-6) enrolled in rural special education classes. The study specifically examined children's planful behaviors and the relationship of planfulness to learning as exhibited through play. Also examined were children's planning levels when planning was explicitly taught versus when it was not taught. Each group was observed over time to determine planning levels and play levels at baseline and end. The treatment group of six children received 12 days of planning training intervention. Planning data and play data from both groups were categorized and analyzed to identify children's levels of social-cognitive sophistication as evidenced in their play. The findings supported the following ideas: (1) the relationship of planfulness and learning is one of practical significance, and (2) planfulness develops along a sequential continuum with teacher facilitation a key element in increasing children's planning ability. Analysis of each child's Individual Education Plan objectives revealed that objectives most frequently addressed the least sophisticated social-cognitive construct (solitary behavior) and least frequently addressed the most sophisticated social-cognitive construct (dramatic-constructive play). (Contains 46 references.) (Author/DB)

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Do the Planful Behaviors of Special Needs Preschoolers Affect Learning as Exhibited Through Play?

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A Research Practicum

Presented to

The Graduate Faculty of Malone College

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Early Childhood Special Education

Molly C. Fender

July, 1996

EC 305236

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Do the Planful Behaviors of Special Needs Preschoolers
Affect Learning as Exhibited Through Play?

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Research Practicum

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ABSTRACT

This quasi-experiment focused on two groups of preschoolers enrolled in rural preschool special education classes. Specifically examined were children's planful behaviors and the relationships of planfulness to learning as exhibited through play. Also examined were children's planning levels when planning was explicitly taught versus when it was not taught.

Each group was observed over time to determine planning levels and play levels at baseline and end. The treatment group received twelve days of planning training intervention, the control group did not. Planning data and play data from both groups was categorized using the researcher's adaptation of the Smilansky-Parten Play Matrix and later analyzed utilizing Pellegrini and Perlmutter's derivation of Three Social-Cognitive Factors. This process revealed children's levels of social-cognitive sophistication as evidenced in their play.

The findings supported the notion that the relationship of planfulness and learning is one of practical significance. Also supported was the notion that, like development in general, planfulness develops along a sequential continuum. Teacher facilitation was identified as a key element in increasing children's planning ability.

This qualitative and quantitative study included an analysis of each child's Individual Education Plan objectives and documented the fact that, in

this study, objectives most frequently addressed the least-sophisticated social-cognitive construct (Factor 2 - Solitary Behavior), and least frequently addressed the most sophisticated social-cognitive construct (Factor 1 - Dramatic-Constructive Play). Supported in this research was the link between planfulness and learning, and the important role of planning ability in the quality of play. Planfulness must not be overlooked as teachers develop learning environments and activities for their students.

Acknowledgements

The completion of this project would not have been possible without the love and patience of my husband, Bill, and my children, Trace and Brooke.

Also thank you to Marie Jamail and Juanita Greenfield, for welcoming me into their classroom for large portions of April and May. Thanks to Carol Austin, my boss and mentor, who graciously allowed me much job flexibility as I struggled to complete this project.

The constant moral support of my friends and coworkers helped me when I felt overwhelmed. Most importantly, they celebrated with me as each step toward completion was accomplished.

The encouragement and positive outlook of my research adviser, Dr. Maxine Burgett, never failed to help me see "the light at the end of the tunnel," and her recommendations and advice were always thoughtful and helpful.

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CHAPTER I

THE PROBLEM

Introduction

Teachers have the responsibility of providing opportunities and experiences for helping young children learn what the methodology of being a good learner is (Casey & Lippman, 1991; DeVries & Kohlberg, 1990). Learning in the preschool child is embedded in play. An exact definition of what constitutes play has been studied extensively. In particular, Rubin, Fein, and Vanderberg (1983), after researching the literature, described six characteristics of play which can be summarized as follows. Play is intrinsically motivated. Thus, motivation for engaging in play behavior comes from the child rather than the adult. The second characteristic of play involves attention to the means rather than the end product. Third, play is dominated by the child, instilling a sense of control. Fourth, play is related to instrumental behavior, also described as pretending. Fifth, play is not bound by formal rules; rules change as play dictates. Sixth, play requires active participation on the part of the child.

The characteristics of play listed by Rubin et al. (1983) give insight regarding how young children learn through play: their own interests must be paramount, the process is most important, it is controlled by the child, involves pretending, is flexible and active.

Of further interest is the fact that play reflects young children's learning (Piaget, in Forman & Kuschner, 1983) and is an

enhancement to cognitive development. Smilansky (1968) described cognitive levels of children's play which were proposed to be directly related to the way they think. The cognitive levels from simple to complex were described as: functional play (motor), constructive play (making and building), dramatic play (role playing and pretending), and games with rules play (usually beginning when children are school aged.)

Another aspect of play which adds to the complexity of its definition and study has to do with social development and growth in young children. Social play development begins in solitary play. Parallel play then emerges as children play side by side. Associative play follows as children interact at some level. Cooperative play can be seen as children take on the fluid role of leader or follower as play "requirements" change.

Purpose of the study

The many complex components of play, briefly noted in the preceding paragraphs (characteristics, cognitive aspects, and social aspects) intertwine and build upon each other as children gain experience and knowledge. In understanding play, teachers gain insight into children's learning. Play can become the teacher's "window" into how young children think. The great task of early childhood educators becomes the obligation to find ways to enhance the play experiences of children (Bredekamp, 1987).

Too often this researcher has observed the special needs child in a wonderfully developmentally appropriate preschool class

wandering around, engaged in nonplay or onlooking behavior. This special needs child, (and indeed even a typically developing child) may lack the skills necessary for entry into a play situation. In addition, the skills necessary to maintain or draw conclusions from play situations may be lacking. Do lack of basic skills such as entry (planning) behaviors interfere with the play process and therefore interfere with learning?

The critical issue of addressing the process of play was first described by Smilansky in 1966 and was identified as a three part sequence involving (a) verbalization of a plan entailing free choice in play related activities; (b) commitment to the activity chosen; and (c) reflection upon the activity undertaken.

More recently Hohmann, Banet, and Weikart (1979) of the High/Scope Educational Research Foundation have adapted Smilansky's three part sequence for use on a daily basis in preschool classrooms. High/Scope teachers refer to this process as Plan - Do - Review and provide daily opportunities for children to actively participate in Plan - Do - Review on a variety of levels.

Even though the above mentioned sequence has been adapted widely from the High/Scope curriculum, it is interesting to note that little research has been conducted on the explicit teaching of planful behavior and whether teaching children how to plan actually affects play and subsequent learning. Planfulness and organizational skills are rarely purposefully taught. As a result, children who are naturally planful and systematic do well in school, with good planning ability

related to higher achievement levels in elementary and high school students. Poor planners often flounder, not necessarily because they lack potential, but because they do not know how to organize and structure their behaviors (Naglieri & Das, 1987).

Statement of the Problem

This research focused on preschoolers enrolled in a rural preschool special education classroom. Specifically examined were children's planful behaviors and the relationship of planning to learning as exhibited through play. Also examined were the differences in children's planning when it was explicitly taught versus when it was not explicitly taught.

Research Questions

As a result of this researcher's experience with preschool special education students, and based on a review of the literature, the following research questions were formulated:

1. Does teacher approach to children's planfulness have an effect on learning as exhibited through play?
2. Is there evidence of sequential steps in learning to plan among preschool children?
3. What are the reasons poor planners often flounder in the developmentally appropriate classroom?
4. To what extent should planning behaviors be considered as possible Individual Education Plan goals for preschool children with special needs?

Delimitations of the Study

This research focused on the planning abilities of preschool special education students ages three through five. This required that each child qualified for preschool special education services and had an Individual Education Plan in effect. Of main concern was planning and its relationship to learning.

Terms and Operational Definitions

1. Planful behavior. The child's expression of choices, interests, ideas. The child's communication of what he **will** do. Communication may be expressed verbally or nonverbally through gestures or actions. Other terms for planful behavior used in the literature include executive control and self-regulation.

2. Planful expression. The child's self-expression of plan in play; there is no attempt to communicate their plan to others.

3. Planning level. The child's ability to communicate his plan to others through gestures, words, or with technical assistance.

4. Quality of learning. Young children learn best by doing. "Doing" in the world of the young child is seen as play. Thus, learning was defined in terms of the cognitive components of play, and the social levels of play. The cognitive components include functional, constructive, and sociodramatic. Social constructs include solitary, parallel, and interactive play. Other categories that were noted included unoccupied behavior, onlooking behavior, and nonplay activities.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature is presented in eight sections. Historical and current thinking regarding how young children learn is examined in the first section. This section also describes features of planful behavior discussed in the research. The second section describes early childhood environments and provides a notion of how planning skills affect children's ability to interact with the environment. Section three discusses the explicit teaching of planful behavior. Section four reviews literature and studies which have examined the development of planful abilities in children. The notion of sequential development of those abilities is discussed in section five. Section six takes note of possible implications for children with inadequate planning skills, and addresses the possibility of including planning as an Individual Education Plan goal for some children. Section seven describes naturalistic observation as a means of evaluating planning levels over time. The last section examines an observational framework designed to describe children's cognitive play levels and social play categories in relationship to planfulness.

How Young Children Learn and a Look at Planful Behavior

How young children learn must inform how teachers teach. Children learn what they play, and the quality of that play is an important factor in what will be learned. As children play they use their minds and their senses to make exciting discoveries about their

world. Early childhood educators and researchers are today agreeing on the importance of developmentally appropriate practice, teaching young children in an age appropriate and developmentally appropriate manner. When participating in a personally meaningful activity of their own choice, the high quality of that play is such that learning results. Play is an integral part of developmentally appropriate practice, contributing to learning and cognitive maturity as children consolidate what they know with what they are learning as they play. It is also the vehicle by which adults can gain information about children's thought processes. The play of children, when carefully observed by adults, can provide clues to developmental and cognitive levels (Odom, 1981; Pellegrini, 1982; Piaget, 1954; Vygotsky, 1976). In the preschool years, learning can be defined through play (Bredekamp, 1987; Hohmann & Weikhart, 1995).

Children, given choice and opportunity, are self-motivated learners as exhibited through play (Fein & Rivikin, 1986/1991). This can be seen in children's faces as they explore and play eagerly with the properties of clay or blocks or sand. In order for children to access developmentally appropriate experiences, they must be able to stay in that play situation for a period of time. For some children with developmental disabilities or delays, the maintenance of play is a difficult or unknown process. Young children with developmental delays or disabilities have needs that are both similar to and different than that of their typically developing peers (Wolery & Wilbers, 1994). Their environments and opportunities may be identical, but the quality

of their play experiences may be dramatically different. This highlights the fact that developmentally appropriate practice is useful for all children and that some adaptations may be necessary to allow children with disabilities to access the developmentally appropriate activities and environment. The environment, as well as adult interaction, may need to be adjusted for the child with developmental disabilities.

Play, in Vygotsky's theory (Berk, 1994), is the defining educational activity for young children. According to Vygotsky, play is an imaginary situation governed by rules. Play facilitates development and supports the emergence of two capacities critical to learning: the ability to separate thoughts from actions and objects (symbolic representation) and the ability to renounce impulsive action in favor of purposeful self-regulatory activity. Vygotsky maintains that the imaginative play of children holds an interesting paradox in which free play, to have meaning, is not really free. It requires self-restraint, renouncing impulsive action, and the capacity to recognize and follow social rules. Self-regulatory activity, or planful behavior is a capacity crucial to choosing and staying with an activity long enough to derive knowledge from the experience. Self-regulation includes elements of a child's inner ability to guide, monitor, revise, and control attention and behavior in order to reach a predetermined self-set goal. Self-regulatory behavior is a crucial aspect of cognitive functioning related to cognitive initiation and cognitive monitoring (Clark & Hoard, 1992).

Piaget maintained that four forces influence cognitive development: children's interactions with the physical world, interactions with the social world, the way children take in and perceive new information, and biological maturation (Wolery & Wilbers, 1994). The quality of children's learning is intertwined with these forces and impacts cognitive development. The fact that child-environment interaction highly affects learning emphasizes that the quality of such interactions is of utmost importance. Personally meaningful interactions chosen and directed by the child lead to high quality play which influences cognitive development (Dewey, 1938/1963; Smilansky, 1968).

Piaget, Montessori, and Vygotsky all viewed self-regulatory, or planful behavior as potential. It is one of many possible activities for children. They believed that self-regulatory processes nourish intellectual growth, have direction, organization, and self-correction embedded within those processes (Elkind, 1993; Vygotsky in Clark & Hoard, 1992). Montessori believed that prepared environments and didactic materials were necessary to release and encourage self-regulatory behavior. Elkind asserts that environment plays a part in learning how to be planful, but intervention or encouragement may be required. He wrote that self regulation is, at least in part, learned (Elkind, 1993).

Planning is a fundamental human cognitive skill and it is difficult to separate planning strategies from a wide variety of cognitive activities. Planning is frequently involved in cognitive activities such

as memory, search, making inferences, and listening (Fabriscius, 1984). The literature has revealed several senses of what planning is. It was described by Patterson and Mischel in Fabriscius' work (1984) as any intention to do or avoid doing something in the future. Wellman (1977) referred to planning as a means to an end or the deliberate use of memory. Willensky (1981) described planful behavior as the ability to look ahead and consider a sequence of actions that would result in a course of action leading to a predetermined goal. Vygotsky's view of planning or self-regulatory ability is described in terms of language; children first think out loud, then internalize this language to form inner verbal thought or private speech. To Vygoytsky, private speech facilitates as well as represents planful behavior (Vygotsky, 1976).

Developmentally Appropriate Environment and Its Relationship to Planful Behavior

Developmentally appropriate environments encourage children to choose, explore, and discover, to be actively involved learners, and to independently solve problems in a safe and supportive atmosphere (Hohmann & Weikart, 1995). In order to access developmentally appropriate environments, children must have a means to express a level of planful ability. For example, children must be able to choose in some way and must have a means to act upon that choice. Children must be able to start, or enter an activity, and stay with or modify that activity. Children, when sitting in the sandbox with dumptrucks and shovels, must be able to purposefully act upon the sand and the dump truck to fill it up or to "drive" it across the sand. Children unable to

stop and act upon objects purposefully or unable to enter an object interaction activity will have little basis for gaining experience and knowledge through play. Planful behavior (executive control, self-regulation) strategies are critical to entry into learning situations. Children's educational experiences should be designed, according to Wolery & Wilbers (1994), so they can access learning experiences relative to their individual level of planning ability. These educational experiences should foster children's abilities to move toward self-sufficiency. The disabilities of many little children prevent them from learning efficiently on their own. For example, children who do not play with toys or materials will be unable to learn from play. Young children with disabilities develop more slowly than their age-mates. If specific abilities and skills are not addressed, the likelihood of these children falling further and further behind is great. The disabilities of young children many times lead to secondary handicaps. Children who have communication delays often times have difficulty interacting with their peers and at times develop behavior problems as they struggle to get their needs met. If children can be taught or encouraged to interact (plan, play, problem-solve) with their environments effectively, then learning experiences that foster children's independence can be pursued successfully.

Explicit Teaching of Planful Strategies

Even though a certain amount of play develops intrinsically in typically developing children and in children with developmental disabilities, parents and educators have a special role in enhancing play

(Glaubman, 1995). Glaubman notes that children do not automatically learn how to play. This may be especially true in children who are unable to enter (plan) and maintain (modify plan) playful activities. Adults can help children achieve flow in play as they encourage, support, model, and expand their play activities. Adults can also actively give guidance and match tasks to children's skill levels to help develop children's sense of control.

The question of when to intervene in children's play remains a subject of concern even though adult support of children is a necessary ingredient in a developmentally appropriate classroom, and a necessary ingredient in effectively expanding children's play experiences (Elkind, 1993; Glaubman, 1995; Hohmann & Weikart, 1995). The point at which to intervene will vary. Some children will need encouragement to make a choice or to enter a play situation. Other children will need facilitation in the area of maintaining or modifying the play. Still others will need enrichment in order to expand their level of play. It is the task of the adult to determine children's level of play skills and to interact with each child accordingly.

Examination of the Development of Planful Behavior

A research project in 1987 studied executive control and its components during solitary play (Besevegis, 1987). The components studied included temporal aspects, organizational aspects, and evidence of advance planning. The project demonstrated that there is development with age in all three aspects, especially as evidenced in

dramatic play situations (when compared to constructive play situations). Two hypotheses under consideration were tenable:

1. Advance planning in solitary play directs the quality of play.
2. Advance planning in solitary play is partially determined by the child's cognitive level.

It was not determined which hypothesis held more weight.

Sequential Aspects as Planfulness Develops

Children's planning ability over time becomes more sophisticated. As children have more experiences, they begin more and more to think ahead and plan how play will go (Gowen, et al., 1992; Nicholich, 1977). Early forms of planning can be identified with the beginning of simple statements before an activity. For example, a child may say "drink" or "milk" before pretending to pour milk in the housekeeping area at preschool. Another way early planning can be identified is by noting children's search for just the right item with which to represent their play idea (to serve as a play symbol). As children reach age four or five planning sometimes becomes the prominent behavior in symbolic play as they invest a great deal of time discussing and negotiating with others about who will do what and what will happen during the play session.

Researchers agree that cognitive activity can be described as the successive coordination of existing patterns and the incorporation of new mental components to form a series of levels (Piaget, 1954). This was brought to light in a study of children interacting with two objects and their increasingly complex approach to interacting with the objects

(Woodward, 1983). The earliest purposeful behavior noted was one of spatial relationships, that is, children experimenting with "in-out" or "on-off." This occurred from about the end of children's first year. At about eighteen months children added "put and leave" to their repertoire. As they neared the twenty-four month age children placed similar objects together and could make some placements by form. Selection of a matching object (given only two choices) was present near the thirty-sixth month. Such expressions of the development of thinking suggest that activities of children are outward expressions of cognitive development. Inherent in cognitive functions such as how children interact with two given objects is the notion that development is sequential and requires some measure of advance thinking, or planful behavior, in addition to the presence of memory. The cognitive approaches children take to interacting with objects and peers are seen as increasingly sophisticated over time and maturation. Planful expression or executive control may also develop in a sequential manner (Gowen, 1995; Woodward, 1983). Indeed, the High/Scope curriculum (Hohmann & Weikart, 1995) describes the development of planning as follows:

Infants -- Work to repeat pleasant random actions.

Toddlers -- Follow their intentions but focus on doing rather than on outcomes.

2-year olds -- Focus increasingly on outcomes; not easily distracted.

3-year olds -- Work purposefully toward a goal one step at a

time.

3 1/2 to 5 1/2 -year olds -- Gradually gain the ability to plan a multistep sequence of actions to reach a goal. (p. 173)

When comparing planful behavior of typical children and special needs children, the literature has little specific information regarding characteristics unique to either group. Research conducted in 1992 (Clark & Hoard) examined the possible presence of cognitive self-regulatory behaviors in typical and special needs children. This study attempted to develop tasks that reduced or omitted the significant language component usually found in such research. Because there was no need to rely on verbalizations, the researchers were able to examine the development of planning in children who were pre-linguistic. The results suggested that the emergence of metacognitive self-regulatory behaviors (planful behaviors) are consistent with the notion that self-regulatory behaviors in both typical and special needs children follow a developmental continuum, and that some level of planful behavior exists in children from a very early age.

Implications for Poor Planners: Should Planning be Considered as a Goal on a Child's Individual Education Plan?

Poor planners often struggle in developmentally appropriate preschool environments (Naglieri & Das, 1987). Many choices are available to children in such settings, but they must be able to effectively begin purposeful activity. A level of planfulness is necessary to enter play, be it sitting in the rocking chair in

housekeeping rocking a baby doll or laying on the floor looking at his own reflection in the mirror. To engage in either activity mentioned requires a level of planfulness. For example, choosing to find a baby, get a blanket for the baby, go to the rocking chair and hold the baby close while rocking does require a level of planning ability. Interestingly, this activity also requires a level of cognitive activity in which memory, imitation, and pretense plays a large role. The second scenario mentioned in which the child is laying on the floor looking at his image in the mirror also requires a level of planful behavior. This child had cerebral palsy, and was positioned by his teacher on the floor near the mirror. He was able to adjust his line of vision so he could see himself in the mirror. This small movement demonstrated purposeful activity that enabled him to study his reflection as he stuck his tongue out and in, out and in, out and in. This child showed a level of planfulness and was able to access his environment, becoming actively involved in a personally meaningful activity. The child who is not able to engage will have little or no basis for gaining useful, accurate knowledge about the world.

Children with special needs many times have difficulty entering play due to their disability. All children (Elkind, 1993; Montessori, 1967; Piaget, 1954) have the potential for self-regulatory activity that will nourish intellectual growth. Self-regulatory activity has direction, organization, and self-correction. It is potential, and is one of many activities a child can experience. It can be enhanced with adult support as adults prepare the environment and interact with children. For the

preschool child who cannot self-regulate or plan it becomes imperative that planful behaviors are carefully addressed, as entry into play is the starting point for learning.

Wolery & Wilbers (1994) discuss the notion that early education experiences should be designed to meet individualized goals. Young children with disabilities should have educational experiences that lead to independence, facilitate self-learning strategies, assist them in accessing the learning environment, and allow effective interaction with others.

Naturalistic Observation of Planning

Planning, as most cognitive structures in young children, must be inferred from behavior and revealed through play. Gowen, et al. (1992) noted that planning mirrors development and provides clues to children's thought processes. Even so, identification of planning in young children can be a complicated issue in that young children very often cannot speak or verbalize their plan. This is especially true of the child with special needs. Evidence of planning must be identified through their actions in play (Fabriscius, 1984). Indeed, in the early stages of planning, words or thinking out loud may not be the main clue to a child's planful activity (Clark & Hoard, 1992). This can be seen in little babies who reach out for their mother's face, an expression of early planfulness.

Planful-looking behavior may need to be distinguished from true planful behavior. An attempt to distinguish planful-looking behavior from true planfulness was undertaken in a study that took special care

to control for planful-looking behavior versus actual planful behavior (Fabriscius, 1984). Fabriscius described a definition of planning developed by Hayes-Roth & Hayes-Roth (1979) that identifies three criteria of planning: predetermination, a course of action, and a goal. These three criteria again must rely on the keen observations of children's behavior and the child's actual predetermination and course of action that leads to a goal. Such behaviors will be embedded in children's play behaviors and can be identified through clues such as verbalizations of intent, gestures, eye-pointing, and degree of persistence. Astute analysis of observations of children's play will lead to the conclusion that children have indeed engaged in planful behavior or that their actions have instead resulted from a sequence of random events. Play must be carefully observed and analyzed when examining systematically gathered data that can be measured with a systematic and trusted methodology.

Test Information

Examining the strategies that young children use to gain knowledge can be an overwhelming task. Research supports the notion that young children learn through play (Bredekamp, 1987) and that their play, if observed carefully, provides insight into their cognitive processes. As planfulness is inextricably intertwined with children's metacognitive abilities, the observation of children must be defined in terms of play behaviors that can provide clues as to level of cognition and levels of planfulness (Bredekamp & Rosegrant, 1992; Cohen & Stern, 1983; Sylva, Roy, & Painter,1980). Naturalistic

observation is the methodology preferred to examine qualitative issues as children engage in play. Observing children in their own environment provides rich information which can be gathered and organized for analysis against a set of criteria. Both social and cognitive dimensions of play should be examined in order to make meaningful developmental and educational inferences about play behaviors (Pellegrini & Perlmutter, 1987). The literature widely agrees that play passes through a sequence of developmental stages, however there does not exist a singular approach to categorizing these stages. A well respected approach, still in use today, was developed by Parten in 1932. This categorization of play describes play as beginning at a solitary level. As children have more experiences, they add increasingly complex categories of play to their repertoire. Children still maintain the earlier categories of play even though they add more sophisticated categories to their play approaches. Parten viewed play as advancing through the following sequence (Hendrick, 1994):

> She viewed play as advancing from solitary play (playing alone, with little reference to what other children nearby are doing -- characteristic of very young children), to parallel play (playing beside, but not with, a companion child with toys that are similar -- often seen in the play of 2- and 3- year olds), to associative play (playing together but not subordinating their individual interests to a common goal -- often witnessed in the play of 3 1/2- to 4 1/2-year-old children), and finally to cooperative play (playing together for a common purpose -- often apparent

> in the play of 4- and 5-year-olds who organize themselves into a group). (pp. 42-43)

In addition to Parten's focus on social play, Smilansky, in 1968, developed a categorization process focused on intellectual growth and based on Piagetian theory. Smilansky's categorization of play is also widely accepted as a methodology for examining children's play and learning. It is especially useful when paired with Parten's system, providing a well-rounded picture of critical aspects of children's play (Federlein, 1981; Hendrick, 1994; Pellegrini & Perlmutter, 1987).

Smilansky organized play following Piaget's perspective (Hendrick, 1994):

> Smilansky divides play according to functional play (the child makes use of simple movements to provide exercise -- characteristics of infants and young toddlers), constructive play (the child works toward a goal of some sort, such as completing a puzzle or picture -- characteristic of children up to about 3 1/2 years), and sociodramatic play (the child assumes roles and uses language for pretending). By age 7 the child reaches the stage of games with rules, which is described as the highest form of cognitive play. (p. 43)

Additionally, non-play categories to be noted include onlooking (Federlein, 1982), unoccupied, and rough and tumble behaviors (Hendrick, 1994). Onlooking behavior is evident when a child observes others playing but he himself does not overtly enter the activity. Unoccupied behavior describes the child who is not playing in

an involved manner, but watches momentarily, plays with own body, follows the teacher around, and is generally not involved in purposeful activity. Rough and tumble includes activity involving two or more children who are running and chasing or pretending to fight. Self-help tasks included activities such as nose-care or putting personal belongings away.

The test used in this study was adapted and developed by this researcher based on the well-accepted framework (Pellegrini, 1982; Pellegrini & Perlmutter, 1987) that combined the Smilansky Play Scale (Smilansky, 1968) and the Scale of Social Participation (Parten, 1932). Also added to this framework were considerations of nonplay behaviors noted earlier (Federlein, 1982; Heindrick, 1994). Naturalistic observation was the methodology implemented to gather documentation of children's behavior.

The Smilansky-Parten Play Matrix itself was critically examined by Pelligrini and Perlmutter (1987). Their findings suggested that this matrix "provides interesting concurrent and predictive validity data for children's play." (p. 89) They cited the example (Rubin & Daniel-Beirness, 1983) that solitary-functional play, when found in kindergartners, is a negative predictor of their sociometric states in first grade.

The Play Matrix provided construct and concurrent validity as it accounted for both social and cognitive aspects, and formed a useful developmental and educational model for studying children's play in a meaningful way.

The matrix, however, does have some problems which must be considered. The measures within the matrix may be measuring similar dimensions of children's behavior. Also the sheer number of possibilities may make data interpretation difficult. Both these problems were addressed in Pellegrini and Perlmutter's 1987 study. They developed a fewer number (three) of social-cognitive factors which could be looked at in a hierarchical manner and were indicative of children's play level. They additionally determined the extent to which the separate constructs were present themselves in the data, and used factor analysis to then group intercorrelated measures.

The planning environment was monitored by carefully listing any activities related to the implementation of planning-training for the treatment group. The listings documented interventions applied to the treatment group: a description and schedule of the planning games and activities facilitated by the teacher, and any individualized planning strategies developed for the children. (Hohmann & Weikhart, 1995).

CHAPTER III
PROCEDURES

The topic areas reviewed in chapter three include a description of the subjects, the research design, the instruments implemented, the variables, the general and specific research questions, data collecting procedures, analysis of the data, and limitations of the study.

Subjects

This study focused on children ages four, five, and six enrolled in a preschool special education program housed in an early childhood center in rural Ohio. Children enrolled in this classroom had a wide variety of special needs and qualified for services based on Ohio's educational policies for preschool children with disabilities (Rules for The Education of Preschool Children with Disabilities, 1991). Each child in this study had been identified as being developmentally disabled or developmentally delayed and had an Individual Education Plan in effect.

The children attended preschool four mornings or four afternoons a week. Each class had six children enrolled. The class was taught by a certified early childhood special education teacher and a teacher's assistant. All children in the program received speech and language therapy. Some of the children received other therapies such as physical therapy and occupational therapy. Children had a period of time daily to choose activities and materials. The classroom was divided into areas to provide developmentally appropriate choices.

The areas available included: housekeeping, blocks, games, discovery table, and books.

Variables Under Investigation

This researcher chose to examine the following variables:

1. Current level of planning ability was determined according to High/Scope's criteria for measuring planning levels in children (Hohmann, Banet, & Weikart, 1979). Each child's level of planning ability (see Appendixes A & B) served as a dependent variable.

2. Children's levels of social-cognitive functioning as collected by an adaptation of the Smilansky-Parten play scale (see Appendix C) and measured against Pellegrini and Perlmutter's Three Social-Cognitive Factors served as a dependent variable (see Appendix F). Nonplay categories including unoccupied, onlooking, self-help, and rough and tumble behaviors were additional dimensions measured.

3. Teacher approach to facilitating planfulness utilizing the Plan - Do - Review sequence as developed by High/Scope served as an independent variable in configuring planning games and activities (see Appendix D) along with implementing individualized planning strategies for each child (see Appendix E).

Derivation of Research Questions

General Research Question 1

RQG1: Does teacher approach to children's planfulness have an effect on learning as exhibited through play?

Specific Research Questions Q1 - Q3

Q1: How do environmental cues affect planful behavior?

Q2: Does the use of planning games and experiences have an affect on planful behavior?

Q3: Do individual planning adjustments facilitated by the teacher have an effect on planful behavior?

General Research Question 2

RQG2: Is there evidence of sequential steps in learning to plan among preschool children?

Specific Research Questions Q4 - Q5

Q4: Do the children, when studied as a group, exhibit varying levels of planning abilities?

Q5: Do individual children exhibit increasingly sophisticated planning levels over time?

General Research Question 3

RQG3: What are the reasons poor planners often flounder in the developmentally appropriate classroom?

Specific Research Question Q6 - Q7

Q6: How does children's planning ability affect their ability to become engaged in meaningful play?

Q7: Are negative nonplay behaviors evident to a greater extent in children with low planning levels when compared to children with more sophisticated planning levels?

General Research Question 4

RQG4: To what extent should planning behaviors be considered as possible Individual Education Plan goals for preschool children with special needs?

Specific Research Question Q8

Q8: When examining current I.E.P goals and objectives for each child, is individual planful level linked to subsequent progress or lack of progress on I.E.P. goals and objectives?

Q9: When examining the current I.E.P. goals and objectives, is the necessity of a level of planful behavior inherent in those goals and objectives?

Research Methodology

This research study examined planfulness and its relationship to learning through play in the light of a quasi-experimental design using groups of preschool special education students as they already existed. The Control Group Time Series Design was chosen as a useful approach to examining the educational issues addressed in this research project. This particular research design uses periodic measurement and the introduction of an experimental treatment into the time series of measurements (Ary, Jacobs, & Razaveih, 1972). These measures were applied to both the control group and the treatment group. Before- and after- measures were implemented to examine the differences in learning (play) after applying two treatments:
(a) provision of planning materials to promote planning and
(b) implementation of planning training activities.

Periodic measurements across time provided a check on maturation, testing, and regression, problems common to threatening internal validity. The same measurement approaches and instruments were used over the entire course of the research project. These approaches included naturalistic observations applied to learning as exhibited through play (Cohen, & Stern, 1983; Sylva, Roy, & Painter, 1980) and also applied to levels of planfulness. The effect of the treatment was tested across time using this researcher's adapted version of the Smilansky-Parten Play Scale.

Naturalistic observation and completion of the planning level checklist was implemented to determine pre- and post- planning levels as defined according to High/Scope criteria.

The control group provided a level of assurance that the treatment was the likely reason for change, and that history, or an unknown contemporary event, probably did not cause the change.

Even though the time series design uses repeated tests, in this case there was little worry that the interaction effect of testing would jeopardize external validity. The subjects in this case were not aware of the testing process as the methodology implemented was unobtrusive naturalistic observation.

This qualitative inquiry implemented a quasi-experimental design to gather context rich information regarding planful behavior in an attempt to develop a meaningful understanding of planful behavior and its relationship to learning. Though qualitative in philosophy, this project also generated descriptive data for consideration and analysis.

Instruments

Smilansky-Parten Play Behavior Scale (adaptation)

In order to extract meaningful information from observations of children's play, a well-respected instrumentation in use since 1968 was adapted by this researcher and applied in this project. The Smilansky-Parten Matrix of Play Behavior was examined carefully by Pellegrini and Perlmutter to determine if indeed the play matrix did represent social and cognitive constructs represented in children's play (Pellegrini & Perlmutter, 1987). It is accepted that both cognitive and social

dimensions of children's play should be examined in order to make meaningful developmental and educational inferences about play behaviors. The combination of the Smilansky scale which addresses cognitive issues (functional, constructive, dramatic, and games with rules) and the Parten scale which addresses social issues (solitary, parallel, and interactive) provides a useful methodology for organizing observational data in a meaningful way. Pellegrini and Perlmutter cross-hatched the cognitive and social dimensions and applied statistical factor analysis using varimax rotation to extract significant factors that could be applied to children's play behavior. The following aspects of play were crosshatched to yield nine subcategories for study:

Solitary- functional
Solitary-constructive
Solitary-dramatic
Parallel-functional
Parallel-constructive
Parallel-dramatic
Interactive-functional
Interactive-constructive
Interactive-dramatic

The first construct listed in each pair is from Smilansky's social scale and the second construct listed is from Parten's cognitive categories.

Pellegrini and Perlmutter found that the Smilansky-Parten matrix of play behavior can be described along three dimensions which can be used to simplify construction of observational play instruments. The

work revealed three factors that reflect children's level of cognitive sophistication:

Factor 1: Dramatic-Constructive Play. Such play behaviors represented relatively sophisticated social-cognitive engagement from each of the measures of dramatic play including solitary, parallel, interactive, and rough and tumble play which often includes pretense.

Factor 2: Solitary Behavior. This category of play behaviors represented regressive social-cognitive behavior, in that it was composed largely of onlooker behavior that was inactive and nonsocial. Solitary behavior was seen less frequently as children got older.

Factor 3: Functional-Constructive Play. This category also captured nonsocial constructs of solitary behavior. Factor 3, however, reflects play behavior that is solitary but includes active engagement with objects, and therefore reveals play behavior that is cognitively high and socially low. Functional-constructive play was seen more frequently as children got older.

An adapted version of the Smilansky-Parten matrix (see Appendix C) was implemented to study the impact of children's planful behavior on learning as expressed through play. The matrix (Play Grid) data was was then analyzed using Pellegrini and Perlmutter's extraction of three Social-Cognitive Factors (see Appendix F) as indicators of children's level of cognitive sophistication.

Other aspects analyzed were onlooker, unoccupied, rough and tumble, and age. As a result of behavioral and classroom observations

conducted prior to the data collection phase, the need to include additional nonplay categories for study became apparent, based on the daily routine and the nature of the children. Other nonplay categories included were wandering, self-stimulation, and self-help.

Planful Expression Checklist

To determine a baseline level of planful strategies already utilized by children, baseline data was collected during the pre-implementation observation and post-implementation observation phase of the project (see Appendix A). The Planful Expression Checklist measured children's self-expression of planfulness during play. Planful expression data was collected on days 8 and 12 and 16.

Planning Levels Checklist

Planning level was measured using an instrument (see Appendix B) based on High/Scope criteria (Hohmann, Banet, & Weikart, 1979). The Planning Level Checklist measured the child's ability to communicate his plan to others. Baseline data was exstablished and planning level data was collected periodically.

Planning Games and Activities

The Planning Games and Activities Form was completed by the teacher to document changes in teacher approach to planning training in the treatment group vs. no planning training in the control group. Included is a schedule of planning games and activities (see Appendix D), as well as a listing of individualized planning strategies implemented in the treatment group (see Appendix E).

Data Collection Procedures

Before the study began, this researcher attended one morning and one afternoon preschool session completing behavioral observations based on the Smilansky-Parten play scale. This was undertaken to provide information relative to typical behavioral approaches of the children as well as to provide a notion of the daily routine and to determine any modifications that may be necessary to the data collection procedures (Ary, Jacobs, & Razaveih, 1972). At this time observations regarding each child's individual planning level (baseline) were gathered. Also noted was each child's predominant mode of communication (child usually relies on gestures, single words, sentences, or technical support) (see Appendix C). The information guided minor modifications to the data collection process and in addition provided baseline information on individual children.

The research data was gathered periodically during the free choice or Plan - Do - Review portion of the daily routine. Data collection took place in four day segments (the preschool was in session Monday through Thursday from 9:00 to 11:30 (A.M. group) and 12:30 to 3:00 (P.M. group). This researcher gathered the social - cognitive play data using a timed sequence recording system, utilizing a tape recorder and headphones to cue timed intervals for observing the target child. Timed intervals for observation rotated every five seconds in a sequential manner from child to child, and took place during the free choice portion of the day initially. Baseline data was gathered on days one through four of the study.

The treatment variables were introduced on the fifth day. After the introduction of the treatment variables, the timed interval rotation and sequence remained the same, but did not start until the planning activity was completed. The data was collected during the "Do" portion of the Plan - Do - Review process on days five through sixteen.

Days five through eight and days eight through sixteen continued the planning training and implementation. On days eight, twelve, and sixteen planning level data was gathered.

The control group data was collected in the same manner throughout the baseline period, days one through four, during the free choice part of the day. Control group planning levels were not tracked after the initial baseline planful expression and planning level was established until days twelve through sixteen of the implementation, when the control group, beginning on day twelve, was exposed to planning materials only (which matched the treatment group planning materials), absent teacher facilitation. Planning levels were then tracked to determine if the presence of planning materials , without teacher facilitation, impacted planning level.

After the data collection phase of the project, children's current I.E.P. (goals and objectives) were examined to determine the possibility of planful abilities as a link to progress made on I.E.P. goals.

Data Analysis

The data collected was analyzed using descriptive statistics. The observations were categorized and organized using frequency data or percentages as appropriate. The mean and standard deviation were calculated and the practical level of significance was derived. Data was presented in table format or graphically where indicated.

Limitations of the Study

A limitation acknowledged in this research project is the small number of children studied and the lack of randomized selection. This is typical of the quasi-experimental approach which often must be used in educational research in that it is not possible to choose subjects randomly. The subjects must then be studied as they already exist, in this case, in two relatively small groups assigned to two preschool classes.

The Smilansky-Parten Play matrix consistently measured levels of social-cognitive play behaviors, lending a level of assurance of reliability, however chance interferences had to be recognized (Pellegrini & Perlmutter, 1987). There was the very human possibility that children could change from day to day, depending on the amount of sleep, or if he ate breakfast, or any other chance situations of life. An adequate number of observational data was collected to offset the possibility of change in children from day to day. The task itself remained relatively consistent from day to day, with much of the actual data being collected in reference to children's planful choices. The limited sample size was also noted; the addition of a control group was

an effort to provide comparison data. Any inferences from this research project must be made with caution.

The statistical procedures utilized were descriptive in nature as observations were organized and quantified. Inferences to a larger population were difficult to determine due to the lack of a randomized sample.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

Children's planful behaviors and social-cognitive play constructs were carefully observed during the data collection phase of this project. Chapter IV is organized into four sections in which a description of the study findings are reported. Each section focuses on a General Research Question and the results of the research data pertaining to each Specific Research Question. Included in the results are percentages where appropriate, the mean and standard deviation, and, where applicable, tables or figures relating data findings.

Results of Research Questions

Results of Research Question Related to Whether Teacher Approach to Children's Planfulness Has an Effect on Learning as Exhibited Through Play

Specific Research Question 1:

Q1: How do environmental cues affect planful behavior?

Environmental cues only (provision of planning materials) had little or no effect on planful behavior. Planning materials were provided for the control group on days 12 through 16; there was no teacher facilitation of planning activitities. When examining the control group planning level and planning expression level it was evident that no major change occurred when environment only (provision of planning materials with no teacher facilitation) was taken into account. Planful expression remained at the same level, Mean of 2.3, and Standard Deviation of 0. Planning level increased from Mean of 1.05 to Mean of 1.10 with a Standard Deviation of .025. These findings were not of practical significance; there was no significant change in the control group planful expression or planning level when planning materials only, with no teacher guidance, was applied.

Specific Research Question 2

Q2: Does the use of planning games and experiences have an effect on planful behavior?

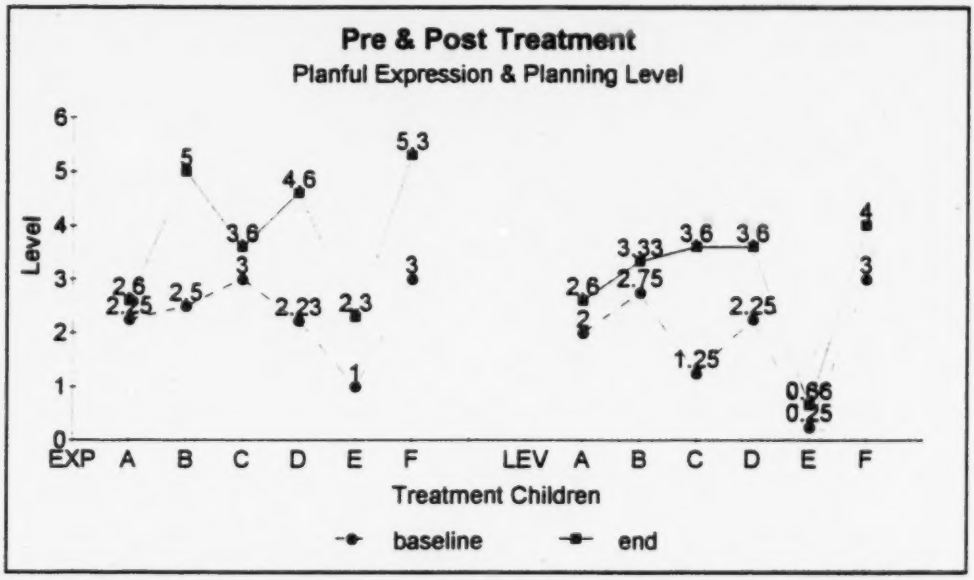

Figure 1. Children's planful expression and planning levels increased after twelve days of planning training including planning games and activities. In the treatment group planful expression with a Mean of 2.9 increased to a Mean of 3.9 (Standard Deviation of .5). Planning level also increased from a Mean of 1.9 to a Mean of 2.9 (Standard Deviation of .5). This change was of practical significance.

Specific Research Question 3:

Q3: Do individual planning adjustments facilitated by the teacher have an effect on planful behavior?

As discussed earlier, children's mean planful expression and mean planning level increased after twelve days of planning training games and activities, and including individualized planning strategies for each child (see Figure 1.) The intervention treatment and individualization took place simultaneously and it was not possible to separate the two parameters.

Results of Research Question Related to Evidence of Sequential Steps in Learning to Plan among Preschool Children

Specific Research Question 4:

Q4: Do children, when studied as a group, exhibit varying levels of planning abilities?

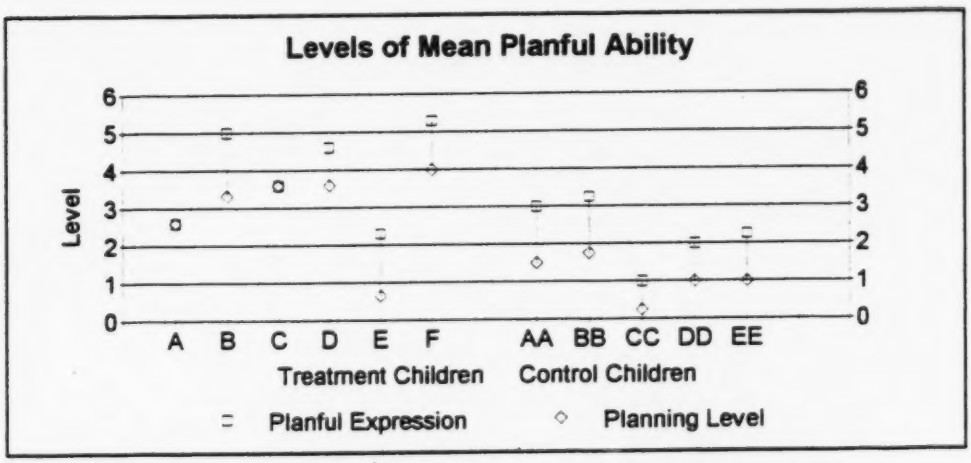

Figure 2. Mean end planning ability of individual children was measured. Children in both the treatment group and the control group varied in planful expression during play and also in planning level as they communicated their plan. Results revealed that planful expression level ranged from a low of 1 (child works to repeat pleasant random action) to a high of 5.3 (child uses a multi-step process). Planful expression scores could have ranged from a possible low of 1 to a high of 6. Results revealed that mean end planning levels ranged from a low of .25 (child gives no indication of having choices or plans in

mind, stands around idly or follows the teacher around, not making any decisions of his own) to a high of 4 (without much prompting from the teacher, child communicates what he is going to do.) Planning level scores could have ranged from a possible low of 0 to a high of 6.

Specific Research Question 5:

Q5: Do individual children exhibit increasingly sophisticated planning levels over time?

Table 1

Treatment Group Mean Planning Level Measured Periodically Over 16 Days

Child	A	B	C	D	E	F
Baseline	2	2.75	1.25	2.25	0.25	3
Trtmnt 1	2	3	3	3	1	4
Trtmnt 2	3	3	4	3	0	4
Trtmnt 3	3	4	4	5	1	4
End	2.6	3.33	3.6	3.6	0.66	4
SD	0.3	0.29	1.18	0.68	0.21	0.5

Note. The values represent planning levels, the ability of children to communicate their plan to others. The planning levels of all children in the treatment group increased over time and with treatment interventions. All increases were of practical significance.

Table 2

Control Group Mean Planning Levels Measured at Baseline and End and Standard Deviation

Child	AA	BB	CC	DD	EE
M BSELNE	1.5	1.75	0	0.75	1.25
M END	1.5	1.75	0.25	1	1
SD	0	0	0.13	0.13	0.13

Note. The values represent planning levels, the ability of children to communicate their plans to others. The planning levels of two children in the control group remained the same, two increased .25 (Children CC and DD), and one child's planning level decreased .25 (Child EE). The results showed no practical significance.

Results of Research Question Related to Why Poor Planners Often Flounder in the Developmentally Appropriate Classroom

Specific Research Question 6:

Q6: How does children's planning ability affect their ability to become engaged in meaningful play?

Table 3

Treatment Group Baseline Mean Planning Levels and Baseline Mean Social-Cognitive Factors

Child	A	B	C	D	E	F
Plan Level	2	2.75	1.25	2.25	0.25	3
M F-1	13	14.25	10.25	12.25	3.75	13.25
M F-2	7	3.5	7.5	4.25	14.25	15
M F-3	11	10	6	15.5	13	4.25

Note. Planning level value is defined according to children's ability to communicate their plans to others. The higher the score the higher the planning level (see Appendix B). Factor 1 (F-1), Factor 2 (F-2), and Factor 3 (F-3) define social-cognitive constructs as detailed in Appendix F. Factors 1 and 3 encompass relatively sophisticated social-cognitive constructs; Factor 2 contains regressive social-cognitive constructs.

Table 4

Treatment Group End Mean Planning Levels and End Mean Social-Cognitive Factors

Child	A	B	C	D	E	F
Plan Level	2.6	3.33	3.6	3.6	0.66	4
M F-1	16	19	9.75	15.5	2.1	17.6
M F-2	8.5	1.75	10.33	3.25	15.45	8.25
M F-3	2.58	5.25	8.3	9	11.16	3.33

Note. Planning level is defined according to children's ability to communicate their plan (Appendix B). The higher the score the higher the planning level. Factor 1 (F-1), Factor 2 (F-2), and Factor 3 (F-3) are Social-Cognitive Factors described in Appendix F. Factors 1 and 3 represent relatively sophisticated social-cognitive constructs and Factor 2 represents regressive social-cognitive constructs.

Table 5

Mean Baseline, Mean End, and Standard Deviations as Related to Planning Level and Social-Cognitive Factors in the Treatment Group

	Plan level	Factor 1	Factor 2	Factor 3
Mean bsln	1.6	5.07	5.13	4.99
Mean end	2.96	7.1	3.78	3.78
SD	0.68	4.98	3.35	3.07
Prac. Sig.	2	0.4	0.4	0.39

Note. Treatment group mean planning level and its relationship to mean social-cognitive factors were determined to show practical significance.

Table 6

Mean Baseline, Mean End, and Standard Deviation as related to Planning Level and Social-Cognitive Factors in the Control Group

	Plan level	Factor 1	Factor 2	Factor 3
M Baseline	1.05	2.7	5.55	19
M End	1.11	2.65	4.25	14.7
SD	0.5	1.26	2.37	8.13
Prac. Sig.	0.12	0.039	-0.54	-0.528

Note. Any change in mean control group planning levels and mean social-cognitive play factors was not of practical significance.

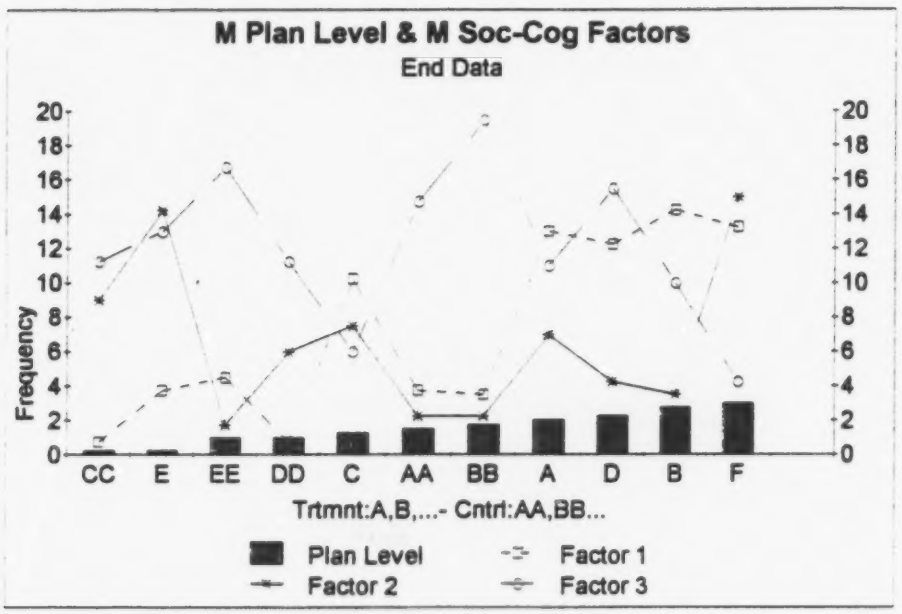

Figure 3. Post-treatment mean planning level as it relates to post-treatment social-cognitive factors observed in play. Represented is end data combining both treatment group data (children: A,BC,D,E,F) and control group data (children: (AA,BB,CC,DD,EE).

When planning level data was arranged in order from lowest level to highest level, and paired with Social-Cognitive Play Factors it was noted that higher planning levels were more likely to be found with Factor 1 and Factor 3 Social-Cognitive Constructs. Factor 2 generally occurred at a more frequent rate when planning ability was low.

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Specific Research Question 7:

Q7: Are negative nonplay behaviors evident to a greater extent in children with low planning levels when compared to children with more sophisticated planning levels?

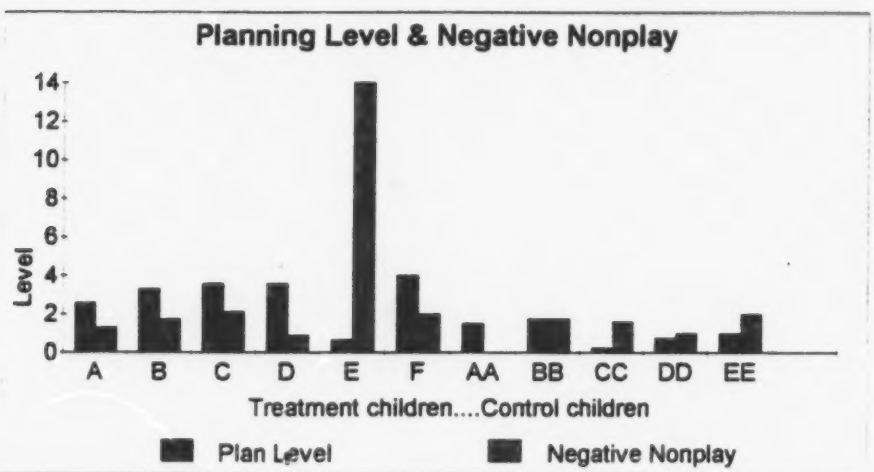

Figure 4. In general, children with higher mean planning levels exhibited fewer negative nonplay behaviors. Children with lower planning levels tended to have a greater frequency of negative nonplay behavior. Here, child E exhibited a high frequency of negative nonplay behaviors related to self-stimulation.

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Results of Research Question Related to What Extent Should Planning Behaviors be Considered as Possible Individual Education Plan Goals for Preschool Children With Special Needs?

Specific Research Question 8:

Q8: When examining current I.E.P. goals and objectives for each child, is individual planful level linked to subsequent progress or lack of progress on I.E.P. goals and objectives?

Table 7

Mean Planning Levels as They Relate to the Percentage of Indivdidual Education Plan Objectives Achieved

Child	Plan Level	% of objectives achieved
F	3	100
B	2.75	100
D	2.25	100
A	2	80
BB	1.75	100
AA	1.5	75
C	1.25	75
EE	1.25	66
DD	0.75	50
E	0.25	50
CC	0	50

Note. The possible range of planning ability levels included a low of

0 (zero) through a high of 6. The children from both the treatment group (A,B...) and the control group (AA, BB...) were listed from the highest mean planning level to the lowest mean planning level. In general, children with relatively higher planning levels achieved higher percentages of their IEP goals.

Specific Research Question 9:

Q9: When examining the current I.E.P. goals and objectives, is the necessity of a level of planful behavior inherent in those goals and objectives?

The I.E.P. goals for each child, when analyzed, fell into one of the Three Social - Cognitive Factor categories and were grouped accordingly. I.E.P. goals for physical and occupational therapy and for self care skills were not included in the grouping process.

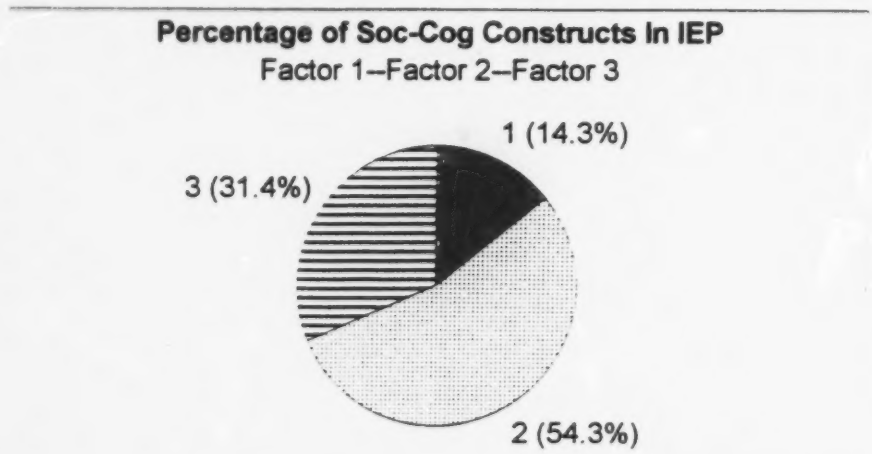

Figure 5. Social-Cognitive constructs (Factor 1, Factor 2, and Factor 3) were extracted from I.E.P. objectives. A level of planfulness

is necessary to engage in Factor 1, Factor 2, and Factor 3 play. The most sophisticated type of play is found in Factor 1, dramatic-constructive play. Factor 3, functional-constructive play follows with the next most sophisticated play constructs which appear in solitary behavior. Factor 2, inactive and non-social solitary behavior entails regressive social-cognitive behaviors behaviors and is the least sophisticated of the Three Factors.

CHAPTER V

SUMMARY

Introduction

The final chapter of this document is divided into three major sections. A summary of the research project is presented by reviewing the problem, the research questions, and the procedures. The conclusions section is presented with a discussion of (a) planful behavior and planful training, (b) varying and sequential aspects of planfulness, (c) planning ability and its relationship to quality of play, (d) the relationship of planning materials and individual planning adjustments to planfulness, and (e) Individual Education Plans and their relationship to planfulness and social-cognitive factors. The last sections deal with implications of the study for teachers of young children with disabilities and implications for further research, followed by a general statment of conclusion.

Summary of the Study

Statement of the Problem

This study examined the planfulness of children ages four, five or six years old with developmental disabilities and how their planfulness related to their learning as exhibited through play. Planfulness training was implemented with a group of special needs preschoolers to

determine how planning levels impact play and if planning can be taught.

Children learn through play, and those who cannot "get started" in play or who have difficulty engaging in meaningful play will have little opportunity for learning. In order to access meaningful play experiences, it is necessary for children to have a level of play entry (planfulness) ability.

Planful behavior is comprised of two components: planful expression and planning level. Planful expression can be observed in children as they go about their daily play. Planful expression can be described along a continuum: the very young child works to repeat a random pleasant action, the child later follows intention with no concern for the outcome, then he follows intention purposefully, next he works purposefully toward a goal one step at a time, utilizes a multi-step process, and finally he modifies his plan. Planning level can be observed in the way children communicate their plan to others. Planning level begins with a child having no choice in mind, to looking at or going to area of interest. Next the child may intentionally communicate an idea by pointing to or naming an area or material, then he may communicate a plan with much teacher prompting, then communicate a plan on his own. The last two most sophisticated steps include the child describing how he will carry out his plan with teacher facilitation, and finally detailing how he will carry out his plan on his own (see Appendixes A & B).

Planfulness and its relationship to learning were examined according to social and cognitive constructs which were observed as children participated in free play activities at preschool. These observations were documented using an adaptation of the Smilansky-Parten Play Scale developed by this researcher. The resulting data was then examined against Pellegrini and Perlmutter's Social-Cognitive Factors. Pellegrini and Perlmutter's research revealed three factors derived from the Smilansky-Parten Play Matrix that were predictive of social-cognitive sophistication. Factor 1, dramatic-constructive play, can be described as relatively sophisticated social-cognitive engagement and includes each measure of dramatic play including solitary, parallel, interactive, and rough and tumble play when it includes pretense. Factor 2, solitary behavior, represented regressive social-cognitive behavior. It was composed mainly of onlooker behavior that was inactive and nonsocial. Solitary behavior tended to decrease as children matured. Factor 3, functional-constructive play also included nonsocial components of solitary behavior, however Factor 3 play behaviors included active (solitary) involvement with objects, and therefore were cognitively high and socially low. This type of play occurred more frequently as children matured.

This study examined planfulness and its relationship to learning as exhibited through play.

Research Questions

This research project focused on four general research questions:

General Research Question 1: Does teacher approach to children's planfulness have an effect on learning as exhibited through play? From this general research question three specific research questions were generated to examine the different aspects of teacher approach and its effect on planning and play. Examined were teacher development and use of planning materials, teacher use of planning games and activities, and teacher facilitated individual planning adjustments for children.

General Research Question 2: Is there evidence of sequential steps in learning to plan among preschool children? From this general research question two specific research questions were generated to address varying planning abilities within the group and examine individual children's planning levels over time.

General Research Question 3: What are the reasons poor planners often flounder in the developmentally appropriate classroom? From this general research question two specific research questions were developed to examine the relationship between planning ability and meaningful play, and to determine the relationship, if any, of low planning ability and negative nonplay behaviors.

General Research Question 4: To what extent should planning behaviors be considered as possible Individual Education Plan goals for preschool children with special needs? From this general research question two specific research questions were derived to examine the

possibility of a link between I.E.P. objective achievement and level of planfulness; and to examine current I.E.P. objectives to determine if a level of planfulness was inherent in the objectives themselves.

Statement of Procedures

This study examined planfulness of young children with developmental disabilities and its relationship to learning. This study was inspired by this researcher's experiences with children enrolled in early child special education programs and their frequent inability to enter into and maintain play. The research was guided and supported by the literature, although it should be noted that the literature regarding planfulness was quite sparse.

The preschool children studied ranged in age from 4 years 2 months old to 6 years 7 months old with a mean age of 5.475. The mean age for the control group was 4.95. The mean age for the treatment group was 6.0. It was critical to note that the mean chronological ages were likely to be much higher than the mean mental ages due to the nature of the children being studied. Each child had a significant developmental disability or a set of developmental delays that were the basis for enrollment in special education at the preschool level. This researcher did not have access to children's cognitive testing. However, a certain amount of assurance regarding the children's depressed developmental status can be assumed due to their participation in the preschool class provided by the local school for children with mental retardation and developmental disabilities.

The treatment group consisted of three girls and three boys who attended Monday, Tuesday, Wednesday, and Thursday mornings. All of the children received speech therapy and two of the children received physical and occupational therapy. The control group also consisted of six children, all boys, however one child was absent 12 of the 16 days of the data collection phase and was therefore not included in the results. The control group consisted of five children who attended preschool Monday through Thursday afternoons. All the children in the control group received speech therapy and two of the children received physical and occupational therapy.

Both the control group and the treatment group used the same classroom environment: materials, availability of toys and activities, and daily routine. Both groups were taught by the same teacher and teacher's assistant.

This researcher used a quasi-experimental design and implemented periodic measurement of both groups with introduction of planning training interventions to the treatment group only. Baseline measures and across-time measures of planful ability were applied to both groups after each of three planning treatments were conducted and at the end of the data collection phase. The three interventions applied to the treatment group consisted of a series of teacher-developed planning training games and activities. The only intervention applied to the control group was provision of planning materials (no teacher facilitation of planning) during the last four days of data collection.

This was an effort to determine if children would, independently, utilize novel items in the classroom to promote planning.

Data collection of planful abilities consisted of scales adapted from the High/Scope curriculum which measured planful expression and planning level observed in children's play (see Appendixes A & B). In addition to collecting data on planful ability, data collection of play (learning) behaviors occurred simultaneously. Play data was also gathered across time and measured against this researcher's adaptation of the Smilansky-Parten Play Scale (see Appendix C). The Play scale addressed social and cognitive constructs in play. Play scale data was then analyzed according to Pellegrini's and Perlmutter's derivation of three cognitive-social factors. Factor 1 (dramatic-constructive play), Factor 2 (solitary behavior), and Factor 3 (functional-constructive play) reflect levels of social and cognitive components of play (see Appendix F).

Other aspects analyzed included nonplay behaviors such as onlooking, unoccupied, rough and tumble, and self-help.

Conclusions

The conclusions section provides discussion regarding the research questions found to be tenable with respect to planfulness training, planfulness and learning, and sequential aspects of planning ability. Also discussed was the lack of evidence to support the notion that planning will occur with the provision of planning materials and the absence of teacher facilitation. In addition, the question of whether individual planning adjustments for each child impacted planning ability is addressed. IEP objectives and how they relate to planfulness and social-cognitive constructs are examined in the light of Pellegrini and Perlmutter's Three Social-Cognitive Factors.

Discussion of Planfulness and Planfulness Training

Specific Research Question 1: How do environmental cues affect planful Behavior?

This study revealed that when children were provided with planning materials only and without teacher direction there was no significant change in children's ability to plan. This result is similar to the findings of previous research and reports in the literature in which children's ability to meaningfully interact with their environment was examined as it relates to adult involvement (Glaubman, 1995; Gowen, 1995).

Specific Research Question 2: Does the use of planning games and experiences have an effect on planful behavior?

In this research project, planning games and experiences developed and facilitated by the teacher (See Appendix D) had a significant effect on planful ability of children in the treatment group.

This finding supported the work of Glaubman (1995) which emphasized the importance of adult encouragement as children learn how to enter play and maintain play. Elkind (1993) also discussed the idea that all play behavior is not intrinsic and that there is a level of learning play skills, including play entry (planning), which must take place. Different levels of adult intervention are apppropriate for individual children ranging from encouragement to modeling to direct teaching (Elkind, 1993; Wolery & Wilbers, 1994.) Also defining the role of adult involvement as crucial was Fabrisciuus (1984), Smilansky (1968),Vygotsky (in Clark & Hoard, 1992), Wellman (1977), and Willensky (1981). They beleived the notion that children's ability to choose (plan) and interact with their environment impacts the quality of children's learning and can be enhanced by adult involvement. The role of adults was dictated by children's individual levels of play skills and included a variety of approaches: preparation and implementation of planning games and activities, provision of adult modeling of skills, deliberate preparation of the environment to promote child planning and choice-making, and encouragement of children's expansion of skills through open-ended questioning and gentle suggestions.

Hohman & Weikart (1995) have incorporated planning as a key element in their High/Scope Curriculum. They beleive that children's ability to make a plan is necessary for children to have personally meaningful experiences which lead to learning and optimal development. Planning opportunities and encouragement are provided as an intergral part of the High/Scope Curriculum, however explicit and purposeful teaching of planning for children who do not inherently know how to communicate their plan is not directly addressed.

Specific Research Question 3: Do individual planning adjustments facilitated by the teacher have an effect on planful behavior?

The findings of this research project did not lead to a clear understanding of the role of individualized provisions that were implemented according to each child's specific needs.

Generally accepted knowledge as well as the literature supports the notion that when children's individual needs are taken into account, learning is facilitated. Play entry and maintenance are critical components of learning and individual needs and disabilities can impact children's abilities to be planful (Bredekamp, 1987; Nagleri & Das, 1987; Wolery & Wilbers, 1994).

Discussion of Sequential Aspects of Planfulness

Specific Research Question 4: Do children, when studied as a group, exhibit varying levels of planning ability?

It is generally accepted that children vary widely in exhibition of ability levels. This is evident as children learn to walk, learn to use words, or learn a specific skill such as building a tower of blocks. Each child develops at his or her individual rate but develops along a predictable sequence (Piaget, 1954). This research project agreed with the generally accepted notion that children show varying levels of ability across individuals. In this case, the group of children studied exhibited varying levels of planful ability.

Specific Research Question 5: Do individual children exhibit increasingly sophisticated planning levels over time?

It is generally accepted that development follows predictable sequences (Parten, 1932; Piaget,1954). According to this researcher's findings planfulness also follows a developmental sequence.

This result supports the works of Besevegis (1987) Gowen, et al (1992), and Nicholich (1977) which revealed that executive control (planfulness) develops with age in a sequential manner, and that as children have more experiences, planning becomes more sophisaticated. Woodward (1983) specifically noted that planning appears early in children's first year as they experiment with properties of their world such as reaching for objects, finding their hand, dropping toys, visually following their mother, and etc.

The High/Scope Curriculum (Hohmann & Weikart, 1995) identifies the sequence of development as existing along an increasingly sophisticated continuum when applied to planning. Clark & Hoard (1992) studied the planfulness of special needs children by eliminating the need for children to verbalize their plan. The results were consistent with the notion that planning develops sequentially and is present very early in life.

Discussion of Planfulness as it Relates to Learning

Specific Research Question 6: How does planning ability affect children's ability to become engaged in meaningful play?

For Smilansky (1968), planfulness and learning were inextricably intertwined. Indeed, Nagleri & Das (1987) found that poor planners frequently flounder as their play entry skills impede their ability to learn through play. Learning in the young child is defined in terms of play and planfulness is the link to involvement in meaningful play (Bredekamp, 1987; Hohmann & Weikart, 1995; Parten, 1932; Smilansky, 1968).

The results of this study supported the literature in that planfulness was indeed linked to children's ability to access play (learning) experiences.

Specific Research Question 7: Are negative nonplay behaviors evident to a greater extent in children with low planning levels when compared to children with more sophisticated planning levels?

According to the literature, entry into play and maintenance of play (planfulness) is critical for meaningful learning to take place (Bredekamp, 1987; Fein & Rivikin, 1986/1991; Vygotsky, 1976).

Wolery & Wilbers (1994) described the situation that so frequently occurs in which children with disabilities were unable to access the learning environment unless adaptations and experiences to promote play entry and maintenance were purposefully taught. This inability to enter play led to increased levels of negative behaviors which caused children to fall even further behind.

The findings of this study supported the notion that children with low levels of planfulness exhibited more negative nonplay behaviors than did children with higher planning levels.

Discussion of I.E.P. Objectives and their Relationship to Planfulness

Specific Research Question 8: When examining current I.E.P. goals and objectives for each child, is individual planful level linked to subsequent progress or lack of progress on I.E.P. goals and objectives?

Achievement of I.E.P. objectives do appear to be linked to planning level. The data analyzed in this study revealed that children with higher planning levels achieved a greater percentage of their I.E.P. objectives.

This data agrees with the finding of Wolery & Wilbers (1994) that planfulness is a necessary ingredient for play entry and maintrenance and that planning ability must be present for learning to

take place. It follows that children with little planning ability would have less success achieving I.E.P. objectives. According to Glaubman (1995), children who do not enter and maintain play must be taught to do so. As Bredekamp (1987) defines the great task of early childhood educators as one of figuring out how to enhance play experiences of young children, it would appear that entry into that play should be of prime consideration.

Specific Research Question 9: When examining the current I.E.P. goals and objectives, is the necessity of a level of planful behavior inherent in those goals and objectives?

When analyzing each child's I.E.P., each objective was categorized (excluding physical therapy objectives, occupational therapy objectives, and self-care objectives) and grouped according to Social-Cognitive Constructs of Factor 1, Factor 2, or Factor 3 (Pellegrini & Perlmutter, 1987). Factor 1 represented dramatic-constructive play and included relatively sophisticated social-cognitive participation from each of the components of dramatic play including solitary, parallel, interactive, and rough and tumble when it included pretense. Factor 2 represented solitary behavior that was largely regressive and was comprised of inactive, nonsocial onlooker behavior. Factor 3 represented functional-constructive play which was cognitively high and socially low; it included nonsocial constructs of solitary behavior defined by active involvement with objects.

In this research study, the I.E.P. objectives were categorized according to Factor 1, Factor 2, or Factor 3 behavioral components. It

was found that the highest percentage of I.E.P. objectives were composed of Factor 2 behaviors, the middle percentage of I.E.P. objectives were represented in Factor 3 behaviors, and the fewest number of I.E.P. objectives were identified as comprising Factor 1 behaviors. In other words, objectives most frequently dealt with the lowest social-cognitive construct (Factor 2) and least frequently dealt with the highest level social-cognitive construct (Factor 1). The literature reveals that play entry and maintenance are critical for learning to take place (Bredekamp,1987; Fabriscius, 1984; Parten, 1932; Vygotsky, 1976).

Implications

Planning and Meaningful Play

How young children learn must influence how teachers teach. The quality of children's play is critical as children learn what they play. Play is learning in the young child (Berk & Winsler 1995; Bredekamp, 1987; DeVries & Kohlberg, 1990; Forman & Kuschner, 1983; Piaget, 1954; Vygotsky, 1976). Play experiences must be of value for each child regardless of ability level or disability. Young children with disabilities many times have difficulty accessing meaningful play experiences. Either the disability itself physically impedes play entry or the child's lack of good play experiences have interfered with progress in developing play skills (Federlein, 1982; Gowen, et al.; 1992) It is the teacher's responsibility to maximize each child's capacity to learn through play.

Planfulness is a basic skill that directs the quality of play experiences. Children with poor planning ability often flounder in a developmentally appropriate setting in which children must settle on an activity of their own choosing. The skills associated with planfulness (such as making a choice, acting on that choice, sticking with it and applying problem-solving approaches when needed) may not be in their repertoire unless specifically taught (Nagleri & Das, 1987; Wolery & Wilbers,1994). Vygotsky (Berk, 1994) made an insightful depiction of free play. He felt that free play, to have meaning for each child, is not really free. It requires a measure of self- control,

ability to follow social rules, and self- regulation. In other words, executive control is necessary for children to enter and maintain play.

Play entry may be a more difficult task for children with disabilities than for the typically developing children. The presence of physical limitations or cognitive issues may impact greatly on the disabled child's planfulness and, therefore, meaningful play. Then, should it not become a priority for teachers to assess planning level and to purposefully teach planfulness?

Assessment of Planning Ability

Assessment of planning could easily take place at the beginning of each school year and periodically thereafter. A planful expression and planning level checklist could be completed through routine observations as children play. The checklists would yield initial planning level, direct development of I.E.P. objectives and direct training strategies, in addition to documenting progress across time. This research project used adaptations of planning and developmental checklists found in the High/Scope Curriculum (1987/1995). An extra "bonus" in assessing children's planfulness is that children's planning level can provide valuable insight into children's social-cognitive development (Clark & Hoard, 1992). This study supported the notion that the relationship of planning ability and social-cognitive development is one of practical significance.

This research project identified planful behavior as following the well-accepted notion (Smilansky, 1968; Parten, 1932; Piaget, 1954)

that development occurs along a predictible continuum and that each child's rate of development is individual. The sequential nature of planfulness could assist teachers as they evaluate children's present levels, develop I.E.P. goals, and evaluate children's progress over time. There is a level of planfulness that exists in even very young children (Besevegis & Neimark, 1987; Woodward, 1983). Therefore, evaluation of planfulness level could provide a meaningful starting point as teachers develop I.E.P. objectives for very low functioning children. In order to incorporate planning into their curricula, teachers could modify the planning expression and planning level checklists from this research project (see Appendixes A & B) to fit their teaching situation.

It is interesting to note that children who are not yet showing a significant planning level on the Planning Level Checklist many times are showing an adequate level on the Planful Expression Checklist. All children in this study showed a level of planful expression when planning level was not yet obvious. This researcher's assumption is that children many times possessed a non-communicative self expression of a plan but were unable to purposefully communicate that plan to others. This observation supports the previous works (Besevegis & Neimark, 1987; Clark & Hoard, 1992; Fabriscius, 1984) which eliminated the need for plan verbalization when examining planfulness of children with disabilities. The findings revealed that even very young children or children with special needs have a level of

planning ability present at a very early age; planfulness was present even though the subjects did not communicate their plan to others.

The Teaching of Planning

Planfulness or executive control is the "doorway" to meaningful play. Planning behaviors should be purposefully taught and should be a skill addressed on children's Individual Education Plans according to their existing level of planfulness and in an effort to increase and expand planning ability.

Planning training can take place across several dimensions: environment, group activities, individualized adapted equipment, props, and, most importantly, teacher-child interaction (Casey & Lippman, 1991). This research project applied a small amount of planning training to a group of children for twelve days. During that short amount of time planning ability increased to a level of practical significance. It had a positive effect on children's social-cognitive play involvement. If planning training could be conducted purposefully and consistently over the entire course of the school year, it is this researcher's belief that planning levels would increase; therefore, learning through meaningful play would increase. When children can more effectively and frequently interact meaningfully with their environment, more opportunities for learning occur, leading to more sophisticated levels of planning, playing, and problem-solving.

Planning training implementation could take several forms: (a) embedded in the daily routine at circle time or small group time (b) embedded in the environment with availability of planning props such as picture labels, planning boards, area labels (c) individualized planning for children with physical disabilities; included could be adapted equipment, communication boards, laser pointers, yes-no cards, or technology-assisted methods (d) teacher facilitation to expand children's current planfulness level using techniques such as open-ended questioning, modeling, play-partnering, following the child's lead, discerning and participating in the child's play idea, making unobtrusive observational staments as children engage in play.

This research reinforced the notion (Elkind, 1993; Glaubman, 1995) that environment and materials alone, with no teacher facilitation, are not sufficient to instill planful behaviors as a useful addition to children's repertoire. A key element that promoted children's planfulness was appropriate level of teacher involvement.

Individual Education Plans That Promote Increased Abilities

Wolery & Wilbers (1994) advocate that early educational experiences should be individually designed to promote independence, facilitate self-learning strategies, and allow effective interaction with others. It is imperative that teachers teach young children according to how young children learn. Children learn by doing. They learn by participating in personally meaningful play activities of their own choice. Children with disabilities often times are unable to enter play,

limiting learning opportunities. There is a danger of a spiraling down of skills occurring when children cannot start and maintain a play activity, therefore limiting practice opportunities. With limited quality play practice opportunities children are unable to increase skill levels and fall further and further behind (Wolery & Wilbers, 1994). When children are unable to begin a play event, are unable to choose a play activity, then teachers must begin at the beginning. They must teach children how to enter play. After utilizing observations and checklists specifically designed to determine present levels of planful expression and planning level, teachers could develop I.E.P. objectives that address planning skills. Planning ability would then be purposefully addressed, in addition to being automatically and periodically monitored as teachers and parents periodically review I.E.P. goals and objectives. Teachers who strive for quality play experiences for their students could utilize the Individual Education Plan as a useful vehicle to make planfulness a priority.

Implications for Further Research

The topic of planfulness in young children is one in which there is limited research in the literature. It is this researcher's feeling that further exploration of planfulness in both typically developing children and in children with disabilities is needed to develop practical application of effective planfulness interventions. The inclusion of typically developing children in such a study would provide further

insight into the sequential and developmental aspects of planning ability.

It would be of utmost importance to carefully gather data on a large group of children with disabilities. This project studied two very small existing groups of disabled children; more children studied would yield larger data leading to a larger level of confidence in the findings.

It would be interesting to do a long-term study, perhaps over the course of a school year, to determine the effectiveness of consistent application of planning training treatments. Another expansion to a long-term study would be periodic modification of individual planning training treatments; as children's planfulness increased, the teacher would modify the planning training strategies to match and build upon children's skills.

This researcher has great confidence that data collection with The Smilansky-Parten Play Matrix, when analzyzed against Pellegrini and Perlmutter's Three Social-Cognitive Factors provides pertinent and useful information for teachers. It would be of interest to look at planning in relationship to the Three Social-Cognitive Factors with a larger sample size, and across a a longer time period. It would also be interesting to document any change in the percentage break-down of Factor 1, Factor 2, and Factor 3 content in each I.E.P. as the teacher applies planning training treatments.

Concluding Statement

This research project examined planfulness of young children with disabilities and its relationship to learning through play. Planfulness appears to be the first step in children's ability to engage in meaningful play. Social-cognitive play behaviors increased as planning level increased. This finding supports the limited research in the literature that deals with executive control or planning ability. This researcher has witnessed first hand the child who is unable to make a play choice or stay in play for any length of time. So often this leads to the reinforcement of inappropriate interaction methods as the child "practices" inappropriate behaviors in an effort to access the environment. Teachers who work with young children with disabilities must make the learning of planful behaviors a priority. Wolery and Wilbers (1994) describe effective early education experiences as leading to independence, facilitating self-learning strategies, assisting children in accessing the learning environment, and promoting effective interaction with others. By making planfulness a priority, teachers would touch on all the above-mentioned criteria of effective early education; as children sequentially progress through planfulness they would experience a level of independence, self-learning, meaningful interaction with the environment, and increasingly effective interaction with others as they maintain and modify play ideas. When paying attention to planning (executive control) there would be an increased possibility of drawing out increasingly sophisticated social-cognitive play factors from children. By focusing on planfulness as the

key to play entry and play maintenance, teachers can "begin at the beginning" in providing meaningful environments and experiences in which young children with many varying skill levels can play and learn.

REFERENCE LISTING

Ary, D., Jacobs, C. J., & Razaviegh, A. (1972). Introduction to Research in Education (4th ed.). Orlando, FL: Harcourt Brace.

Berk, L. E. (1994). Vygotsky's theory: The importance of make-believe play. Young Children, 50, (1), 30-39.

Berk, L. E. & Winsler, A. (1995). Scaffolding Children's Learning: Vygotsky and Early Childhood Education. (1995). National Association for the Education of Young Children: Washington, D. C.

Berry, C. F., & Sylva, K. (1987). The Plan - Do - Review Cycle in High/Scope: Its effect on children and staff. Unpublished manuscript. (Available from High/Scope Educational Research Foundation, Ypsilanti, MI)

Besevegis, E. & Neimark, E. D. (1987, April). Executive control at an early age: Advance planning in solitary play. (Report No. PS 016 638). Paper presented at the biennial meeting of the Society for Research in Childhood , Baltimore, MD. (Eric Document Reproduction Service No. ED 282 659)

Bredekamp, S. (Ed.). (1987). Developmentally appropriate practice in early childhood programs serving children from birth through age 8. Washington, DC: National Association for the Education of Young Children.

Bredekamp, S. & Rosegrant, T. (Eds.). (1992). Reaching potentials: Appropriate curriculum and assessment for young children (Vol. 1). Washington, DC: National Association for the Education of Young Children.

Casey, M. B., & Lippman, M. (1991). Learning to plan through play. Young Children, 46,(4). 52-58.

Clark, H. T., & Hoard, C. E., III. (1992, March). Self-regulatory behaviors in preschool children: Fact or fantasy? Paper presented at the annual meeting of the National Association of School Pshchololegists, Nashville, TN. (ERIC Document Reproduction Service No. ED 353 055)

Cohen, D. H., & Stern, V., with Balaban, N. (1983). Observing and recording the behavior of young children (3rd ed.). New York: Teachers College Press.

DeVries, R., & Kohlberg, L. (1990). In Constructivist early education: Overview and comparison with Other Programs (pp. 1-87). (Originally published in 1987 by Longman, Inc. as Programs of early education: The constructivist view.) Washington, DC: National Association for the Education of Young Children.

Dewey, J. (1963). Experience and education. New York: Macmillan. (Reprint, 1938)

Elkind, D. (1993). Images of the young child: Collected essays on development and education (pp. 13-15). Washington, DC: National Association for the Education of Young Children.

Fabricius, W. V. (1984). The development of planning in young children. (Doctoral dissertation, University of Michigan, 1984). University Microfilms International Dissertation Services, 8502806.

Federlein, A. C. (1982, March) Special education preschoolers: Evaluating their play. Paper presented at the annual meeting of the American Educational Research Association, New York, NY. (ERIC Document Reproduction Service No. ED 221 004)

Fein, G., & Rivkin, M. (Eds.). (1991). The young child at play: Reviews of research (Vol. 4). Washington, DC: National Association for the Education of Young Children. (Original work published 1986)

Forman, G. E., & Kuschner, D. S., (1983). The child's construction of knowledge: Piaget of teaching children. Washington, DC: National Association for the Education of Young Children.

Glaubman, R. (1995). Play in teacher education: The Israeli perspective. In E. Klugman & S. Smilansky (Eds.), Children's play and learning: Perspectives and policy implications (pp. 112-133). New York, NY: Teachers College Press.

Gowen, J. W. (1995). The early development of symbolic play. Young Children, 50(3), 75-84.

Gowen, J. W., Johnson, N., Goldman, B. D., & Hussey, B. (1992). Object play and exploration in children with and without handicaps: A longitudinal study. American Journal of Mental Retardation, 97(1), 21-38.

Graves, M. (1989). Daily planning around the key experiences: The teacher's idea book. Ypsilanti, MI: High/Scope.

Hayes-Roth, B., & Hayes-Roth, F. (1979). A cognitive model of planning. Cognitive Science, 3, 275-310. (as cited in Fabriscius, 1984)

Hendrick, J. (1994). Total Learning: Developing curriculum for the young child (4th ed.). New York, NY: Macmillan.

The High/Scope Curriculum: The plan - do - review process. (1989). Ypsilanti, MI: High/Scope Press. [Review of videotape]

Hohmann, M., Banet, B.. & Weikart, D. P. (1979). Young children in action. Ypsilanti, MI: High/Scope Press.

Hohmann, M., & Weikart. D. P. (1995). Educating young children: Active learning practices for preschool and childcare programs. Ypsilanti, MI: High/Scope Press.

Montessori, M. (1967). The absorbent mind. New York: Delta.

Naglieri, J. A., & Das. J. P. (1987). Construct and criterion-related validity of planning, simultaneous, and successive cognitive processing tasks. Journal of Psychoeducational Assessment, 4, 353-363.

Nicholich, L. (1977). Beyond sensori-motor intelligence: Assessment of symbolic maturity through analysis of pretend play. Merrill-Palmer Quarterly, 23, 89-99.

Odom, S. (1981). The relationship of play to developmental level in mentally retarded, preschool children. Education and Training of the Mentally Retarded, 16, (2), 136-141.

Parten, M. (1932). Social participation among preschool children. Journal of Abnormal and Social Psychology, 27, 243-269.

Patterson, C. J., and Mischel, W. (1975). Plans to resist distraction. Developmental Psychology, 11, 369-378. (as cited in Fabriscius, 1984)

Pellegrini, A. (1982). Development of children's social-cognitive play behaviors. (Report No. TM 507 925). Perceptual and Motor Skills, 55 (3), 1109-1110. (Eric Document Reproduction Service No. EJ 280 266)

Pellegrini, A. D., & Perlmutter, J. C. (1987). A re-examination of the Smilansky-Parten Matrix of play behavior. Journal of Research in Childhood Education, 2 (2), 89-96.

Piajet, J. (1954). The construction of reality in the child. New York: Basic Books.

Rubin, K., & Daniels-Beirness, T. (1983). Concurrent and predictive correlates of sociometric status in kindregarten and grade 1 children. Merrill-Palmer Quarterly, 29, 337-351. (as cited in Pellegrini & Perlmutter, 1987)

Rubin, K. H., Fein, G. G., & Vanderberg, B. (1983). Play. In Heatherington, E. M. (Ed.), Handbook of child psychology (pp. 693-774). New York: Wiley.

Rules for the Education of Preschool Children with Disabilities. (1991). Part B, Individual with Disabilities Education Act.
P. L. 101-476. (1975). Ohio Board of Education.

Smilansky, S. (1968). The effects of sociodramatic play on disadvantaged preschool children. New York: Wiley.

Sylva, K., Roy, C., & Painter, M. (1980). Childwatching at playgroup & nursery school (Vol. 2). Ypsilanti, MI: High/Scope Press.

Vygotsky, L. S., (1976). Play and its role in the mental development of the child. In J. S. Bruner, A. Jolly & K. Sylva (Eds.), Play. New York: Penguin.

Willensky, R. (1981). Meta-planning: Representing and using knowlwdge about planning in problem solving and natural language understanding. Cognitive Science, 5, 197-233.

Wellman, H. M. (1977). The early development of intentional memory behavior. Human Development, 20, 86-101.

Wolery, M., & Wilbers, J. (Eds.) (1994). Including children with special needs in early childhood programs. Washington, DC: NAEYC.

Woodward, W. M. (1983). The development of thinking in young children: The problem of analysis. International Journal of Behavioral Development, 6, 441-460.

Yang, O. S., & Michael, W. B. (1986, April). The effect of verbal plan and review training on preschoolers' reflectivity. (Report No. PS 016 281). Paper presented at the annual meeting of the American Educational Research Association, 67th, San Francisco, CA. (ERIC Document Reproduction Service No. ED 277 489)